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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,299	01/23/2004	Vishnu K. Agarwal	M4065.0614/P614 A	4633

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EXAMINER	
WILSON, ALLAN R	

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/762,299	AGARWAL, VISHNU K.	
	Examiner	Art Unit	
	Allan R. Wilson	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-37 and 41* is/are rejected.

7)☒ Claim(s) *38-40 and 42-46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0104 & 0404*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the substrate, first through fourth doped regions, contact, first and second conductive layers, dielectric and other layers must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 36 and 37 are objected to because of the following informalities:

Claim 36 recites the limitation "said first electrode" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 37 recites the limitation "said second electrode" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 32 and 35 are rejected under 35 USC § 102(b) as being anticipated by Hieda et al. ("Hieda") U.S. Patent No. 4,942,459.

With regards to claim 32, Hieda illustrates in figures 1-11, particularly figure 2 and 10(A)-10(C), (entire document) a semiconductor substrate 101 having a doped layer 103 of a first conductivity type n; forming a first doped region 104 of a second conductivity type in said doped layer, said first doped region being adjacent a field oxide region 102; forming a charge storage capacitor C2 overlying entirely over at least one of said field oxide region and an active area of said CMOS imager; and forming a contact between said first doped region and said charge storage capacitor, a storage capacity of the capacitor being selected based on the color of the photosensor.

With regards to claim 35, Hieda illustrates in fig. 10(A) said charge storage capacitor is formed by: forming a first conductive layer 104 over said substrate 101 including said field oxide region 102; forming a dielectric layer 106 over said first conductive layer; and forming a second conductive layer 107 over said dielectric layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 33 and 41 are rejected under 35 USC § 103 (a) as being unpatentable over Hieda as applied to claim 32 above, and further in view of Amiotti et al. ("Amiotti") U.S. Patent Application Publication No. 2003/0136989. Hieda is discussed above, it does not show said charge storage capacitor is formed entirely over said field oxide region. Amiotti illustrates in figures 1 and 2 a charge storage capacitor 1-3 is formed entirely over a field oxide region 9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a capacitor formed entirely over a field oxide region as a classical structure.

Claims 34, 36 and 37 are rejected under 35 USC § 103 (a) as being unpatentable over Hieda as applied to claim 32 above, and further in view of Rhodes (disclosed by Applicant) U.S. Patent No. 6,204,524. Hieda is discussed above, it does not show said charge storage capacitor is formed entirely over said active area. Rhodes illustrates in figure 23 a charge storage capacitor is formed entirely over an active area. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a capacitor formed entirely over an active area to improve the charge storage capacity of the imager (col. 13, lines 41-46)

With regards to claims 36 and 37, Rhodes discloses in col. 10, lines 11, a first and second electrode of doped polysilicon.

Allowable Subject Matter

Claims 38-40 and 42-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and correction to the drawings.

Conclusion

Field of Search	Date
U.S. Class and subclass: 438/48, 57	October 18, 2004
Other Documentation: None	N/A
Electronic data base(s): EAST (USPAT, US-PGPUB, JPO, EPO, Derwent, IBM TDB)	October 18, 2004

Any inquiry concerning this communication or earlier communications from an examiner should be directed to Primary Examiner Allan Wilson whose telephone number is (571) 272-1738. Examiner Wilson can normally be reached 7:00-4:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. Wilson

Allan R. Wilson
Primary Examiner
October 18, 2004